

Amendments to the Claims:

The listing of claims below is intended to replace all prior listings of the claims:

1-11. (Canceled)

12. (New) An avionic system for aircraft out of route management and alarm communications comprising:

at least an avionic unit, located onboard an aircraft, provided with:

a memory unit for storing predefined information,

electronic processing means for processing the received information

and comparing it in real time with predefined values,

interfaces for receiving information from onboard systems and sending commands to an aircraft's autopilot to take over the control of the aircraft and return it to predefined flight levels or spatial positions,

suitable sensors for obtaining data on the aircraft onboard situation, communication system for transmitting the onboard situation in real time to a ground control station and receive from the ground control station, or from another aircraft, appropriate instructions when predetermined events occur,

wherein the avionic unit is able to perform a collision avoidance function, to avoid collisions during aircraft flight, landing and take-off, wherein the collision avoidance function defines a monitoring stage, during which the avionic unit constantly compares the position of the aircraft with predefined and stored authorized limits, and a control stage, during which, if the aircraft deviates from the authorized limits, the avionic system intervenes automatically on the autopilot, through said interfaces, to bring back the aircraft within its spatial limit, and

wherein the avionic unit is able to perform an alarm function, wherein the alarm function defines a first, monitoring stage, during which information on the situation onboard the aircraft is stored in the memory unit and is not automatically transmitted to the ground control stations, and a second alarm stage which is activated in cases of alarm, during which the information generated onboard the aircraft by the avionic unit is transmitted to the ground control stations for appropriate evaluation.

13. (New) An avionic system according to claim 12, wherein said information relates to flight paths, world's runways, orography of the land, obstacles and the predefined values comprise flight paths and altitudes or flight levels.

14. (New) An avionic system according to claim 13, wherein where the aircraft sensors comprise surveillance video cameras and miniature transmitters, wearable by the flight crew, in order to obtain information for the avionic unit.

15. (New) An avionic system according to claim 14, wherein the video cameras comprise means for establishing whether they have been disabled, damaged, or are malfunctioning.

16. (New) An avionic system according to claim 15, wherein the sensors comprise heart rate monitors for the pilots to be connected to the avionic unit.

17. (New) An avionic system as claimed in claim 16, comprising means for encrypting and coding the signals exchanged between the aircraft and the ground control station not interfering with the radio band communications.

18. (New) An avionic system according to claim 15 comprising switches located in specific points of the aircraft available to crew and passengers to obtain information for the avionic unit, and a cockpit automatic locking system.

19. (New) An avionic system as claimed in claim 18, comprising means for encrypting and coding the signals exchanged between the aircraft and the ground control station not interfering with the radio band communications.

20. (New) An avionic system according to claim 15 comprising, in the event of an emergency, means suitable for externally and/or automatically disabling the collision avoidance system in accordance to predefined rules.

21. (New) An avionic system as claimed in claim 20, comprising means for encrypting and coding the signals exchanged between the aircraft and the ground control station not interfering with the radio band communications.

22. (New) A ground control station suitable for interfacing with an avionic system comprising at least an avionic device, placed onboard an aircraft, with a memory unit, electronic processing means, interfaces, sensors, communication system, wherein the avionic device is able to perform a collision avoidance function and an alarm function, the ground control station comprising:

at least a computer for processing data received from said avionic system;
a transmission-reception radio system;
an encrypting and/or coding system; and
an audio-visual communications system; and

wherein the ground control station comprises means for carrying out a collision avoidance function, to avoid collisions during aircraft flight, landing and take-off, the collision avoidance function defining a monitoring stage, during which the unit constantly compares the position of the aircraft with predefined and stored authorized limits and a control stage, during which if the aircraft deviates from the authorized limits the unit intervenes automatically on the autopilot, through said interfaces, to take back the aircraft to its spatial limit, and

wherein the ground control station comprises alarm means for carrying out an alarm function, wherein the alarm function defines a monitoring stage, during which information on the situation onboard the aircraft is stored in the memory unit and are not automatically transmitted to the ground control stations, and an alarm stage which is activated in cases of alarm, during which information generated onboard the aircraft by the avionic unit are transmitted to the ground control stations for appropriate evaluation.

23. (New) A method for aircraft out of route management wherein there are provided an avionic system comprising at least an avionic unit, fitted onboard an aircraft, with a memory unit, electronic processing means, interfaces, sensors, communication system, wherein the avionic unit is able to perform a collision avoidance function and an alarm function, and a ground station comprising at least a computer, a transmission-reception radio system, an encrypting and/or coding system, an audio-visual communications system and

means for carrying out a collision avoidance and an alarm function, the method comprising the following steps:

defining first data for a collision avoidance function and loading said data into the avionic unit;

defining second data for an alarm function and loading said data into the avionic unit;

defining third data for at least one ground control station and loading said data into the station;

defining interfaces;

defining communication channels and their respective properties;

defining sensors, transmitters, switches, and video cameras;

determining operating logics of the collision avoidance function and their implementation in the avionic unit;

determining operating logics of the alarm function and their implementation in the avionic unit;

determining operating logics of the ground control station and loading them into the station;

comparing the position of the aircraft constantly with predefined and stored authorized limits intervening automatically on the autopilot to take the aircraft to its spatial limit through the interfaces when the aircraft deviates from the authorized limits storing the situation of the aircraft onboard in the memory unit and not automatically transmitting to the ground control stations; and

transmitting said information generated onboard to the ground control stations for appropriate evaluation when a second alarm state is activated in cases of alarm.

24. (New) Method according to claim 23 wherein the electronic processing means process receive information and compare it in real time with data referring to predefined flight paths and allowed altitudes or flight levels, and wherein the interfaces receive flight information from onboard systems and send commands to the aircraft's autopilot to take over the control of the aircraft and bring it back to predefined altitudes or flight levels or spatial positions, and wherein sensors obtain data on the situation onboard the aircraft, and wherein the communication means and the connecting interfaces transmit information relating to

onboard situation in real time to ground control stations and receive appropriate instructions from the ground control station or from another aircraft when predetermined events occur.